LETTERS

Soviet Arrests Continue

The Soviet physicist Andrei Tverdokhlebov has been arrested. In 1970, he, together with A. Sakharov and V. Chalidze, founded the Moscow Human Rights Committee. More recently he became the secretary of the Soviet group of Amnesty International. The biologist S. Kovalev, another member of this group, was arrested last December.

Sakharov and Shasarevich (a distinguished Moscow mathematician) applied for the release of these men. In an "Appeal to American scientists" Chalidze wrote:

> . . . these repressions involve serious scientists who, despite their public activity and pressure from the regime, have continued scientific work . . . persecuted Soviet scientists have no defense other than to hope for the support of the international scientific community.

We initiate the creation of a Scientists' Committee for Tverdokhlebov. Interested colleagues are asked to write to one of us.

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Graduate Astronomy Programs

The recent recommendation by the National Academy of Sciences' Astronomy Manpower Committee to discourage graduate education in astronomy was reported in the 18 April issue of *Science* (Research News, p. 246). It is clear from reading the full report (*1*) that the intentions of the committee were good. Nevertheless I feel that, as chairman of a department that carries the name of astronomy, I must register my disagreement with that recommendation.

First, the recommendation may backfire. If the graduate program is reduced, so is need for faculty to maintain that program. With the present strong financial pressures on colleges and universities, the total faculty pool may well be cut. Thus the recommendation threatens to set off a vicious cycle that will exacerbate, not abate, the shrinking job market.

Second, a problem exists only if astronomy programs are set up to produce narrow specialists who are unfit, at least psychologically, for any other work. In that case the problem lies in those programs and not in the trivially obvious fact that one cannot have zero population growth in a population that attempts to replicate itself once every year or two. The solution we have adopted is to create a broader interdisciplinary approach so that a degree in astronomy does not restrict its recipient to work only as an astronomer. A few of the best and the luckiest remain in astronomy. The others are able, and feel that they are able, to use their ability and training in problem-solving in the physical sciences to work productively in government or industry. Our graduates are all finding good, useful jobs in which they are successful. They are not overly concerned that these jobs often do not involve a simple extension of their thesis research. There are undoubtedly other approaches to the problem, but the interdisciplinary one has worked well at Rice University.

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1. Astronomy Manpower Committee, Committee on Science and Public Policy, *Employment Problems in Astronomy* (National Academy of Sciences, Washington, D.C., 1975).

Far-Out Diets

The Point of View "Stamp out food faddism" (News and Comment, 16 May, p. 714) is a curious mixture of emotion and inaccuracy. It says that "[o]ur far-out diet—almost 20 percent refined sugar and 45 percent fat—is new to human experience." New indeed, as anyone who has ever mixed or analyzed a laboratory diet could tell the anonymous author. American diets commonly supply about 42 percent of food energy as fat (*1*). Fat has a caloric content 2.25 times that of carbohydrate or protein, so this is equivalent to 25 percent, not 45 percent, of the diet, not counting roughage and minerals, which bring the fat content down to 20 percent or less.

The author implies that our great-grandparents ate diets of raw broccoli, wheat germ, and yogurt, but does not mention

that their life expectancy was less than ours. Actually, the rejection of saturated fats is a recent fashion; our great-grandparents were great consumers of butter, cream, fat pork, lard, suet, and beef drippings. They ate starch, which, like refined sugar, is converted to glucose in vivo. If they ate broccoli, they had enough sense to cook it so it would be digestible. Wheat germ is a great food, even though it contains an estrogen that gives it a potency equivalent biologically to about 400 parts per billion of diethylstilbestrol as measured by the mouse uterine response (*2*). Yogurt is milk is yogurt. It is easy to use the term "junk food" in a subjective manner.

The statement that the "standard" diet "can contribute to obesity, tooth decay, heart disease, intestinal cancer, and diabetes" is an erroneous oversimplification. These are complex problems, involving heredity, hormonal balance, fluoride deficiency, dental hygiene, and even virus diseases. Overeating is paramount to obesity, but, alas, the degenerative diseases will not be arrested by going on a diet of cracked wheat, pumpkin seeds, and dried seaweed.

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1. Committee on Dietary Allowances, Food and Nutrition Board, National Research Council, *Recommended Dietary Allowances* (National Academy of Sciences, Washington, D.C., ed. 8, 1974), p. 33.
2. A. N. Booth, E. M. Bickoff, G. M. Kohler, *Science* **131**, 1807 (1960).

AGRIS

One rather unfortunate misunderstanding might arise from the otherwise excellent article "AGRIS" by Joseph F. Caponio and Leila Moran (24 Jan., p. 233). In the section entitled "Discussion," the authors state, "AGRIS represents the first big international effort to coordinate and to consolidate a spectrum of information activities." This does less than justice to the work of the International Atomic Energy Agency (IAEA) and its member states in their creation of the International Nuclear Information System (INIS).

INIS came into operation in May 1970 and was the world's first computer-based documentation service for which input is prepared on an internationally decentralized basis. The first discussions in the IAEA secretariat, which ultimately led to the implementation of INIS, were initiated by the United States and the Soviet Union in the summer of 1966. R. K. Wakerling of the United States and L. L. Issaev of the Soviet Union, acting as consultants, drew up the first description of the system. Their report was reviewed in December of that year by a working group consisting of experts from 16 countries and three international organizations. Agreement was reached in 1966 on a number of important aspects of INIS which have endured through subsequent years.

In particular, it was decided to adopt a "network" concept for the organization of INIS. Each country or regional organization would scan the literature for the area for which it was responsible and prepare the input data for the system; the IAEA would merge this data to create a master file and would distribute the file in agreed forms (conventional printing, microform, and magnetic tape) for the use of national and regional information services.

INIS is now a well-established and highly efficient system. It has demonstrated that a system based on decentralized input can produce timely and consistent information services.

It may be of some interest to note that the implementation of the AGRIS Level One system—which became operational this year—has been achieved in close collaboration with INIS, making use both of the experience and computer software of the latter system. Further, all computer processing of AGRIS input is being performed as a joint operation with the computer section of the IAEA in Vienna. That this collaborative effort is working smoothly is a further tribute to INIS "know-how."

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Miles-per-Gallon Indicator

In his review of energy conservation (Research News, 23 May, p. 820), William D. Metz should have used the indicative rather than the subjunctive mood in referring to a miles-per-gallon indicator for automobiles. Such an instrument has been available for some time from SpaceKom, Inc., a small company in Santa Barbara, California. It costs about as much as 70 gallons of gasoline.

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